

IN THE CLAIMS:

Please amend claims 1-2, 5-8, 15, 19, 21, 23-24, 27-33 as follows:

1. (*Once amended*) A vertical cavity surface emitting laser (VCSEL), comprising:

an active region further comprising at least one quantum well having a well depth of at least 40 meV and comprised of InGaAsN; and including barrier layers sandwiching said at least one quantum well; and

confinement layers sandwiching said active region.

2. (*Once amended*) The VCSEL of claim 1 wherein said barrier layers are comprised of GaAsN.

5. (*Once amended*) The VCSEL of claim 1 wherein said at least one quantum well further comprises >1% N.

6. (*Once amended*) The VCSEL of claim 1 wherein said at least one quantum well is up to and including 50Å in thickness.

7. (*Once amended*) The VCSEL of claim 5 wherein said at least one quantum well is up to and including 50Å in thickness.

8. (*Once amended*) The VCSEL of claim 1 wherein said barrier layers are comprised of GaAsN.

15. (*Once amended*) The VCSEL of claim 14 wherein said barrier layers are comprised of GaAsN.

19. (*Once amended*) The VCSEL of claim 1 wherein said at least one quantum well further comprises >1% N.

21. (*Once amended*) A vertical cavity surface emitting laser (VCSEL), comprising:

an active region further comprising at least one quantum well having a well depth of at least 40 meV and comprised of InGaAsN; and including AlGaAs barrier layers sandwiching said at least one quantum well; and
confinement layers sandwiching said active region.

23. (*Once amended*) The VCSEL of claim 21 wherein said at least one quantum well is up to and including 50Å in thickness.

24. (*Once amended*) A vertical cavity surface emitting laser (VCSEL), comprising:

an active region further comprising at least one quantum well having a well depth of at least 40 meV and comprised of InGaAsN; and including barrier layers sandwiching said at least one quantum well; and
AlGaAs confinement layers sandwiching said active region.

27. (*Once amended*) The VCSEL of claim 24 wherein said at least one quantum well is up to and including 50Å in thickness.

28. (*Once amended*) A vertical cavity surface emitting laser (VCSEL), comprising:

an active region further comprising at least one quantum well having a well depth of at least 40 meV and comprised of InGaAsN; and including AlGaAs barrier layers sandwiching said at least one quantum well; and
AlGaAs confinement layers sandwiching said active region.

29. *(Once amended)* A vertical cavity surface emitting laser (VCSEL), comprising:

an active region further comprising at least one quantum well having a well depth of at least 40 meV and comprised of InGaAsN; and including InGaAs barrier layers sandwiching said at least one quantum well; and

AlGaAs confinement layers sandwiching said active region.

30. *(Once amended)* A vertical cavity surface emitting laser (VCSEL), comprising:

an active region further comprising at least one quantum well having a well depth of at least 40 meV and comprised of InGaAsN and including GaAsN barrier layers sandwiching said at least one quantum well; and

GaAsN confinement layers sandwiching said active region.

31. *(Once amended)* A vertical cavity surface emitting laser (VCSEL), comprising:

an active region further comprising at least one quantum well having a well depth of at least 40 meV and comprised of InGaAsN and including AlGaAs barrier layers sandwiching said at least one quantum well; and

AlGaAs confinement layers sandwiching said active region.

32. *(Once amended)* A vertical cavity surface emitting laser (VCSEL), comprising:

an active region further comprising at least one quantum well having a well depth of at least 40 meV and comprised of InGaAsN and including GaAsN barrier layers sandwiching said at least one quantum well; and

AlGaAs confinement layers sandwiching said active region.

33. (*Once amended*) A vertical cavity surface emitting laser (VCSEL), comprising:

an active region further comprising at least one quantum well having a well depth of at least 40 meV and comprised of InGaAsN and including AlGaAs barrier layers sandwiching said at least one quantum well; and

GaAsN confinement layers sandwiching said active region.

Un-amended Claims remain in the application as follows:

3. (*Not amended*) The VCSEL of claim 1 wherein said confinement layers are comprised of AlGaAs.

4. (*Not amended*) The VCSEL of claim 1 wherein said confinement layers are comprised of AlGaAs.

9. (*Not amended*) The VCSEL of claim 5 wherein said confinement layers are comprised of AlGaAs.

10. (*Not amended*) The VCSEL of claim 7 wherein said barrier layers are comprised of AlGaAs.

11. (*Not amended*) The VCSEL of claim 8 wherein said confinement layers are comprised of AlGaAs.

12. (*Not amended*) The VCSEL of claim 5 wherein said barrier layers are comprised of AlGaAs.

14. (*Not amended*) The VCSEL of claim 1 wherein said at least one quantum well is further comprised of Sb.

16. (*Not amended*) The VCSEL of claim 14 wherein said confinement layers are comprised of AlGaAs.

17. (*Not amended*) The VCSEL of claim 16 wherein said barrier layers are comprised of AlGaAs.

18. (*Not amended*) The VCSEL of claim 15 wherein said confinement layers are comprised of AlGaAs.

19. (*Not amended*) The VCSEL of claim 14 wherein said barrier layers are comprised of AlGaAs.

20. (*Not amended*) The VCSEL of claim 19 wherein said confinement layers are comprised of AlGaAs.

22. (*Not amended*) The VCSEL of claim 21 wherein said confinement layers are comprised of AlGaAs.

25. (*Not amended*) The VCSEL of claim 24 wherein said barrier layers are comprised of AlGaAs.

26. (*Not amended*) The VCSEL of claim 24 wherein said barrier layers are comprised of InGaAsN.